CONTENTS

Preface vii

List of committees ix

Opening Session I

Missing symmetries, unseen quarks and the physical vacuum
T.D. Lee 3c

Opening Session II

Directions of heavy ion research at low and intermediate energies
P. Kienle 17c

High P_T probes of nuclear collisions
M. Gyulassy, M. Plümer, M. Thoma and X.N. Wang 37c

Reaction Mechanism From Medium to High Energy I

VUU and (R)QMD model of high energy heavy ion collisions
Ch. Hartnack, M. Berenguer, A. Jahns, A. v. Keitz, R. Matiello, A. Rosenhauer, J. Schaffner, Th. Schönfeld, H. Sorge, L. Winckelmann, H. Stöcker and W. Greiner 53c

Space-time evolution of nucleus-nucleus collisions measured by intensity interferometry
C.K. Gelbke 65c

Inversion of collective matter flow in nucleus-nucleus collisions, measured with a 4π charged particle array
J. Péter, J.P. Sullivan, G. Bizard, W.Q. Shen, R. Brou, D. Cussol, M. Louvel, J.P. Patry, R. Regimbart, J.C. Steckmeyer, B. Tamain, E. Crema, H. Doubre, K. Hagel, G.M. Jin, A. Péghaire, F. Saint-Laurent, Y. Cassagnou, R. Legrain, C. Lebrun, E. Rosato, R. MacGrath, S.C. Jeong, S.M. Lee, Y. Nagashima, T. Nakagawa, M. Ogihara, J. Kasagi and T. Motobayashi 75c

Hadronic transport properties in intermediate energy heavy ion collisions
W. Bauer 83c

Reaction Mechanism from Medium to High Energy II

The role of pionic currents in gamma emission during nuclear encounters
H. Nifenecker and J.A. Pinston 93c

Pion production in intermediate energy nucleus-nucleus collisions
T. Suzuki 113c

Subthreshold η production in nuclei at SATURNE
E. Chiavassa, G. Dellacasa, N. De Marco, F. Ferrero, M. Gallio, P. Guaita, A. Musso, A. Piccotti, E. Scomparin and E. Vercellin 121c

A case study in intermittency: the thermodynamic model for intermediate energy heavy ion collisions
K. Haglin, S. Das Gupta and C. Gale 129c

Ultra-Relativistic Collisions I

Collective interaction of mesons in hot hadronic matter
E. Shuryak 139c

Relativistic heavy ion experiments at BNL-AGS
Y. Miake 149c

Ultra-Relativistic Collisions II

Dilepton experiments with ultrarelativistic heavy ions at CERN
P. Gorodetzky 161c

Global variables and forward baryons in 14.6 GeV/nucleon silicon-nucleus collisions
J. Stachel 169c

Probing nuclear matter with dielectrons - results from the Bevalac
L.S. Schroeder 177c

Coherent particle production in relativistic heavy ion collisions
G. Baur 187c

Fusion and Related Problems

Systematics of heavy-ion fusion near the barrier
A.M. Stefanini 195c

Sub-barrier fusion: Probing reaction dynamics with barrier distributions
N. Rowley 705c

Fusion of a halo nucleus and synthesis of superheavy elements
N. Takigawa, H. Sagawa and T. Shinozuka 221c

Anomalous anisotropies of fission fragments in near- and sub-barrier fusion–fission reactions
H. Zhang, Z. Liu, J. Xu, J. Lu, M. Ruan and K. Xu 229c

Formation and Decay of Hot Nuclei

Dynamics of fission and quasi-fission revealed by pre-scission neutron evaporation
D.J. Hinde, D. Hilscher and H. Rossner 243c

Dynamical and statistical properties of hot nuclei
J.B. Natowitz, M. Gonin, K. Hagel, R. Wada, S. Shlomo, X. Bin, M. Gui, Y. Lou, D. Utley, T. Botting, R.K. Choudhury, L. Cooke, B. Hurst, D. O'Kelly, R.P. Schmitt, W. Turmel, H. Utsonomiya, G. Nebbia, D. Fabris, J.A. Ruiz, G. Nardelli, M. Poggi, R. Zanon, G. Viesti, R.H. Burch, F. Gramegna, G. Prete, D. Drain, B. Chambon, B. Cheynis, D. Guinet, X.C. Hu, A. Demeyer, C. Pasteur, A. Giorni, A. Lleres, P. Stassi, B. Viano, A. Menchaca Rocha, M.E. Brandan and P. Gonthier 263c

Evaporation, fission and fragmentation of hot rotating nuclei
F. Garcias, V. De La Mota, B. Remaud, G. Royer and F. Sébille 275c

Multi-dimensional Langevin approach to fission dynamics
T. Wada, N. Carjan and Y. Abe 283c

Mechanisms of intermediate mass-fragment formation from threshold to $E/A = 100$ MeV
V.E. Viola, J.L. Wile, D.E. Fields, K. Kwiatkowski, S.J. Yennello, H.M. Xu, M.B. Tsang, R.T. deSouza, E. Renshaw, J. Pochodzalla, K.B. Morley, W.G. Lynch, W.G. Gong, C.K. Gelbke, D.J. Fields and N. Carlin 291c

Charged particle emissions in fission process
H. Ikezoe, N. Shikazono, Y. Nagame, T. Ohtsuki, Y. Sugiyama, Y. Tomita, K. Ideno, I. Kanno, H.J. Kim, B.J. Qi and A. Iwamoto 299c

Physics with Radioactive Beams I

RIKEN radioactive beam experiments
M. Ishihara 309c

GANIL radioactive beam experiments
A.C. Mueller 321c

Studies of exotic nuclear beams with the NSCL A1200
D.J. Morrissey and B.M. Sherrill 333c

Projectile fragmentation of exotic nuclear beams
T. Kobayashi 343c

Physics with Radioactive Beams II

Structure of neutron rich nuclei
K. Ikeda 355c

Separation of projectile fragments at the fragment separator of GSI - first experimental results
H.-G. Clerc, K.-H. Behr, T. Brohm, A. Brünle, K. Burkard, M. Chen, M. Fauerbach, H. Folger, B. Franczak, Y. Fujita, J.-J. Gaimard, H. Geissel, A. Grewe, E. Hanelt, B. Knölder, B. Langenbeck, A. Magel, G. Münzenberg, F. Nickel, E. Pfeng, M. Pfützner, E. Roeckl, K. Rykaczewski, I. Schall, D. Schardt, K.-H. Schmidt, T. Schwab, K. Sümmerer, M. Steiner, D.J. Vieira, B. Voss, M. Weber, J. Weckenmann, H. Wollnik and C. Ziegler 367c

Structure of ^{6}He nucleus as three-body system: α-particle and neutron momentum distributions
M. V. Zhukov, B.V. Danilin, A.A. Korsheninnikov and L.V. Chulkov 375c

Target-charge dependence of the Coulomb dissociation cross section of ^{11}Li
K. Soutome, S. Yamaji and M. Sano 383c

Reaction Mechanism from Medium to High Energy III

Dynamical fluctuations and nuclear multifragmentation
J. Randrup, G.F. Burgio and Ph. Chomaz 393c

Decaying excited nuclei: Present status of a sequential model approach
B. Elattari, J. Richert and P. Wagner 403c

Fragmentation of heavy projectile nuclei with energies between 200 and 1000 MeV/nucleon
J. Dreute, B. Wiegel, G. Rusch and W. Heinrich 411c

Treatment of fermions in microscopic models
P. Valta, J. Konopka, M. Berenguer, A. Bohnet, J. Jaenicke, S. Huber, C. Hartnack, G. Peilert, L.W. Neise, J. Aichelin, H. Stöcker and W. Greiner 417c

Near- and far-side contributions to ejectile polarization
A. Ohnishi, T. Maruyama and H. Horiuchi 429c

Reaction Mechanism from Medium to High Energy IV

Frictional processes and nuclear disassembly in very-heavy-ion collisions in the Fermi energy regime
W.U. Schröder 439c

Energy dissipation in intermediate energy heavy ions collisions
B. Tamain 453c

The rise and fall of multifragment production in $^{197}Au + C$, Al, and Cu reactions at $E/A = 600$ MeV
W. Trautmann, J.C. Adloff, M. Begemann-Blaich, P. Bouissou, J. Hubele, G. Imme, I. Iori, P. Kreutz, G.J. Kunde, S. Leray, V. Lindenstruth, Z. Liu, U. Lynen, R.J. Meijer, U. Milkau, A. Moroni, W.F.J. Müller, C. Ngô, C.A. Ogilvie, J. Pochodzalla, G. Raciti, G. Rudolf, H. Sann, A. Schüttauf, W. Seidel, L. Stuttge and A. Tucholski 473c

Statistical direct reaction theory for dissipative heavy ion collisions in the Fermi energy domain
H. Lenske and H.H. Wolter 483c

Astrophysics with Heavy Ions

Nuclear reactions in astrophysics: recent experimental and theoretical studies, and further quests
M. Arnould 493c

Experimental approach to explosive nucleosynthesis
S. Kubono 505c

Measurement of the $^{3}H(^{7}Li, n_0)^{9}Be$ cross section within the energy range of big-bang nucleosynthesis
A. Coc, P. Aguer, S. Barhoumi, F.M. Baumann, G. Bogaert, P. Delbourgo-Salvador, H. Freiesleben, J. Kiener, A. Lefebvre, C. Rolfs and J.P. Thibaud 515c

The $^{8}Li(^{4}He, n)^{11}B$ reaction cross section at low energies
R.N. Boyd, D. Hirata, N. Inabe, T. Kubo, T. Nakagawa, T. Suzuki, I. Tanihata, M. Yonokura, X.X. Bai, K. Kimura, S. Kubono, S. Shimoura and H.S. Xu 523c

Application of Heavy Ions

Some applications of accelerated ions in industry
P.H. Rose 533c

Heavy ion synchrotron for medical use - HIMAC project at NIRS - JAPAN
Y. Hirao, H. Ogawa, S. Yamada, Y. Sato, T. Yamada, K. Sato, A. Itano, M. Kanazawa, K. Noda, K. Kawachi, M. Endo, T. Kanai, T. Kohno, M. Sudou, S. Minohara, A. Kitagawa, F. Soga, E. Takada, S. Watanabe, K. Endo, M. Kumada and S. Matsumoto 541c

Nuclear Structure from Low to High Excitations I

Giant resonances and intermediate energy heavy ions: Electromagnetic decay experiments
J.R. Beene and F.E. Bertrand 553c

Decay of the giant quadrupole resonance and higher excitation states in ^{40}Ca
Y. Blumenfeld, J.A. Scarpaci, Ph. Chomaz, N. Frascaria, J.P. Garron, I. Lhenry, J.C. Roynette, T. Suomijärvi, N. Alamanos, B. Fernandez, A. Gillibert, A. Lépine and A. van der Woude 565c

Gamma decay of giant dipole resonances and the shapes and fluctuations of hot nuclei
J.J. Gaardhøje, A. Atac and A. Maj 573c

Excitation energy and spin dependence of the giant dipole resonance at finite temperature
J. Kasagi, K. Furutaka, T. Murakami, A. Yajima, M. Ohshima, S. Niiya, H. Tominaga, K. Yoshida, H. Hama, K. Ieki, W. Galster, K. Kubo, M. Ishihara and A. Galonsky 585c

Studies of superdeformation in the $A \simeq 150$ region
B. Haas 595c

Nuclear Structure from Low to High Excitations II

Structure of exotic nuclei
W. Mittig 609c

Multipole resonances in halo nuclei
H. Sagawa 619c

Spin-flip and non spin-flip excitations in the (^7Li, ^7Be) reaction
S. Nakayama, T. Yamagata, M. Tanaka, M. Inoue, K. Yuasa, T. Itahashi, H. Ogata, N. Koori, K. Shima and M.B. Greenfield 627c

Heavy Ion Facilities

Physics with SIS/ESR at GSI
W. Henning 637c

Physics and experiments at RHIC
G.R. Young 649c

Future Project

ISOL based radioactive nuclear beam facilities
T. Nomura 661c

Future prospects of highly relativistic heavy ion physics in Europe
H.H. Gutbrod 671c

List of Participants 681c

Author Index 693c